

ABSTRACT

A torque-limiting coupling device comprises two coaxial, essentially cylindrical co-acting surfaces (12, 22) on two co-acting parts (10, 20) in the form of a cylindrical sleeve (20) and a cylindrical shaft (10) respectively. The sleeve and the shaft are in radially tensioned frictional engagement for transferring torque up to a torque limit that corresponds to the radial tension and at which the sleeve begins to rotate relative to the shaft. The device also includes at least one pump means (3) which is adapted to be driven to pump liquid from a liquid store to a gap (B) between the co-acting surfaces (12, 22) upon relative rotation between the sleeve and the shaft. Means (8) are provided for leading liquid away from the gap (8) so as to re-establish said frictional grip subsequent to the occurrence of relative rotation between said parts. One part (10) has a base which includes a surface layer (50) that defines one (12) of the co-acting surfaces and that is comprised of a material, e.g. tombak, whose plasticizing limit is considerably lower than the plasticizing limit of the material in the co-acting surface of the other part (20). The surface layer (50) includes cavities which enable the surface layer (50) to take a smaller radial thickness after plasticization to enable the parts (10, 20) to be relieved of radial load.